

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2003-125053

(43)Date of publication of application : 25.04.2003

(51)Int.Cl.

H04M 1/02

G06F 3/02

H04M 1/23

(21)Application number : 2001-320769

(71)Applicant : BOSU & K CONSULTING KK

(22)Date of filing : 18.10.2001

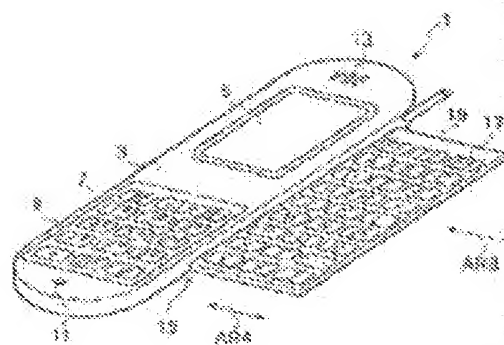
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(54) PORTABLE TELEPHONE

(57)Abstract:

PROBLEM TO BE SOLVED: To dispose an auxiliary key, by providing key pads which can be contained in a body, so as to increase the operating keys of a portable telephone.

SOLUTION: The integral portable telephone 1 comprises a display part 5 and an operation part 9 with main keys 7 disposed in the body 3. The portable telephone 1 further comprises a key pad containing mechanism 15 of a mechanical structure for containing the key pads 19 disposing the auxiliary keys 17, and one or more key pads 19 contained in the mechanism 15 at a predetermined position in the body 3, thereby improving the operating functions and the like.



Jpn. Pat. Appln. KOKAI Publication 2003-125053

SP Number : B0008P1633

(English Documents Translated by Translation Software)

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**CLAIMS**

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[Claim(s)]

[Claim 1]In an integral-type cellular phone which provided an indicator and a final controlling element which has arranged the main key in a main part, A cellular phone equipping a predetermined part with a key pad containing mechanism which equipped said main part with a keypad which has arranged an auxiliary key enabling free receipts and payments, and a keypad stored by this key pad containing mechanism one or more.

[Claim 2]In a foldaway cellular phone which provided an indicator main part which equipped with an indicator an operating section body provided with a final controlling element which has arranged the main key according to a hinge mechanism, said indicator main part and said operating section body -- on the

other hand -- or a cellular phone equipping a predetermined part with a key pad containing mechanism which equipped both with a keypad which has arranged an auxiliary key enabling free receipts and payments, and a keypad stored by this key pad containing mechanism one or more.

[Claim 3]In an integral-type cellular phone which provided an indicator and a final controlling element which has arranged an auxiliary key in a main part, A cellular phone equipping a predetermined part with a key pad containing mechanism which equipped said main part with a keypad which has arranged the main key enabling free receipts and payments, and a keypad stored by this key pad containing mechanism one or more.

[Claim 4]In a foldaway cellular phone which provided an indicator main part which equipped with an indicator an operating section body provided with a final controlling element which has arranged an auxiliary key according to a hinge mechanism, said indicator main part and said operating section body -- on the other hand -- or a cellular phone equipping a predetermined part with a key pad containing mechanism which equipped both with a keypad which has arranged the main key enabling free receipts and payments, and a keypad stored by this key pad containing mechanism one or more.

[Claim 5]The cellular phone according to claim 1, 2, 3, or 4, wherein said key pad containing mechanism consists of the 1st key pad containing mechanism it had to a main part enabling free receipts and payments, and the 2nd key pad containing mechanism it had to this 1st key pad containing mechanism enabling free receipts and payments.

[Claim 6]A cellular phone given in Claims 1-5 any 1 paragraph equipping said main part with a power supply insert part which inserts a power supply section.

[Claim 7]A cellular phone given [ provided with a detection means to detect full admission of a keypad, and an input means which inputs a power supply of a keypad based on said detection means ] in Claims 1-6 any 1 paragraph.

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] Especially this invention relates to the cellular phone which equipped the main part with two or more keypads about a cellular phone.

[0002]

[Description of the Prior Art] The non-foldaway cellular phone with which the indicator and the final controlling element are provided in the main part, and an indicator are provided in an indicator main part, and a final controlling element is provided in an operating section body, and the conventional cellular phone has the folded type cellular phone constituted so that said indicator main part and an operating section body may open and close mutually. And as for both the cellular phone non-foldaway in these, and the foldaway cellular phone, the main key is arranged to the space to which the final controlling element was restricted.

[0003]

[Problem(s) to be Solved by the Invention] By the way, in the conventional non-foldaway one and a foldaway cellular phone, the number of the keystroke buttons arranged at the final controlling element had restriction of the space of a final controlling element on a relation.

[0004] And there was a problem that only the information limited only with the

restricted key button could be inputted.

[0005]When two or more inputting functions were given to one key, the operation accompanied by mode conversion etc. was needed, and there was a problem that operation became complicated.

[0006]When the main part was enlarged recklessly, there was a problem that portability was checked.

[0007]On the other hand, the cellular phone is wanted to play the role of a portable personal computer (personal digital assistant) by progress of an information technology.

[0008]It was made in order that this invention might solve above-mentioned SUBJECT, and that purpose increases a key button, holding the portability (for example, a size, weight, etc.) of a cellular phone, and it is shown in aiming at improvement in operativity and performance.

[0009]

[Means for Solving the Problem]To achieve the above objects, in an integral-type cellular phone which provided an indicator and a final controlling element which has arranged the main key in a main part, It is preferred to have equipped a predetermined part with a key pad containing mechanism which equipped said main part with a keypad which has arranged an auxiliary key enabling free receipts and payments, and a keypad stored by this key pad containing mechanism one or more.

[0010]In a foldaway cellular phone which provided an indicator main part which equipped with an indicator an operating section body provided with a final controlling element which has arranged the main key according to a hinge mechanism, said indicator main part and said operating section body -- on the other hand -- or it is desirable to have equipped a predetermined part with a key pad containing mechanism which equipped both with a keypad which has arranged an auxiliary key enabling free receipts and payments, and a keypad stored by this key pad containing mechanism one or more.

[0011]In an integral-type cellular phone which provided an indicator and a final controlling element which has arranged an auxiliary key in a main part, It is

preferred to have equipped a predetermined part with a key pad containing mechanism which equipped said main part with a keypad which has arranged the main key enabling free receipts and payments, and a keypad stored by this key pad containing mechanism one or more.

[0012]In a foldaway cellular phone which provided an indicator main part which equipped with an indicator an operating section body provided with a final controlling element which has arranged an auxiliary key according to a hinge mechanism, said indicator main part and said operating section body -- on the other hand -- or it is preferred to have equipped a predetermined part with a key pad containing mechanism which equipped both with a keypad which has arranged the main key enabling free receipts and payments, and a keypad stored by this key pad containing mechanism one or more.

[0013]As for said key pad containing mechanism, it is desirable to consist of the 1st key pad containing mechanism it had to a main part enabling free receipts and payments, and the 2nd key pad containing mechanism it had to this 1st key pad containing mechanism enabling free receipts and payments.

[0014]And it is preferred to have equipped said main part with a power supply insert part which inserts a power supply section.

[0015]It is preferred to have had a detection means to detect full admission of a keypad, and an input means which inputs a power supply of a keypad based on said detection means.

[0016]

[Embodiment of the Invention]Hereafter, this embodiment of the invention is described with reference to Drawings. In this example, the housed state of a keypad is in the state where the outside of the keypad belongs inside the outside of a cellular phone thoroughly.

[0017]Drawing 1 shows the integral-type (non-foldaway) cellular phone provided with the keypad (connected with the main part, for example by serial interface by the small keyboard for arranging an operation key button) stored by the key pad containing mechanism of a sliding type.

[0018]The cellular phone 1 shown in drawing 1 is in the state which the keypad

opened fully (in drawing 2, drawing 3, drawing 4, and drawing 5, it is the same).

[0019]The indicator 5 as which the main part 3 of said integral-type cellular phone 1 displays an I/O data. It has the final controlling element 9 by which two or more main keys 7 (key arranged from the former at the cellular phone) which operate the original function of a telephone have been arranged, the microphone part 11 which receives self speech information, and the loudspeaker part 13 which amplifies and outputs the speech information of the partner who received.

[0020]And the rear face of said main part 3 (the field on the back side is said by using as the surface the field where it has the indicator 5 in drawing 1.) Two or more auxiliary keys 17 (by the key provided with functions other than the main key.) stored in this example by that it is the same according to the key pad containing mechanism 15 and the key pad containing mechanism 15 concerned below (it can go in the arrow AR4 direction freely in and out) For example, it has the keypad 19 by which the Home key, return key and alphabetical character which are arranged at the keyboard of the personal computer, the function key which registered a new function, etc. have been arranged.

[0021]Drawing 2 shows the mode of the cellular phone which stores two keypads connected with the integral-type cellular phone.

[0022]The main part 23 of the integral-type cellular phone 21 is provided with the indicator 25 which displays an I/O data, the final controlling element 29 by which two or more main keys 27 which operate the original function of a telephone have been arranged, the microphone part 31 which receives self speech information, and the loudspeaker part 33 which amplifies and outputs the speech information of the partner who received.

[0023]And the key pad containing mechanism 35 (the 1st key pad containing mechanism) provided in the rear face of said main part 23 is provided with the keypad 37, and the key pad containing mechanism 39 (the 2nd key pad containing mechanism) provided in said keypad 37 is provided with the keypad 41. Thereby, each keypad can go in the arrow AR6 direction (in this example, it may be called a longitudinal direction) freely in and out, and is stored by the



main part.

[0024]The auxiliary keys 43 and 45 (for example, the same function key as the alphanumeric character key etc. with which the personal computer is equipped, etc.) are arranged at said keypads 37 and 41, respectively.

[0025]As for a keypad, it is needless to say that it is not limited to two step types and can store on a main part combining two or more steps (3 or more).

[0026]Drawing 3 shows the folded type cellular phone provided with two keypads.

[0027]It has the indicator main part 61 which equipped with the indicator 59 the operating section body 55 provided with the final controlling element 53 in which the folded type cellular phone 51 has arranged the auxiliary key 52 according to the hinge mechanism 57.

[0028]And the key pad containing mechanisms 63 and 65 which store a keypad to said operating section body 55 enabling free receipts and payments. The side front of the operating section body 55 and the back side are equipped with the keypad 67 which has arranged the main key 71 stored by said key pad containing mechanism 63, and the keypad 69 which has arranged the auxiliary key 73 stored by the key pad containing mechanism 65, respectively. Said keypad 67 can frequent a longitudinal direction freely. Said keypad 69 can frequent an arrow AR 2-way (in this example, it may be called a sliding direction) freely.

[0029]Drawing 4 shows the folded type cellular phone provided with two keypads.

[0030]The folded type cellular phone 81 is provided with the indicator main part 91 which equipped with the indicator 89 the operating section body 85 provided with the final controlling element 83 which has arranged the main key 82 according to the hinge mechanism 87.

[0031]The key pad containing mechanisms 93 and 95 which enable receipts and payments of a keypad, the keypad 97 stored by said key pad containing mechanism 93, and the keypad 99 stored by the key pad containing mechanism 95 are formed in each back side of said indicator main part 91 and said

operating section body 85. The auxiliary key 101,103 grade arranged at the keyboard of the personal computer, for example is arranged at the keypads 97 and 99, respectively. Said keypads 97 and 99 can be taken freely in and out of a longitudinal direction.

[0032]Drawing 5 shows the folded type cellular phone provided with two keypads.

[0033]The folded type cellular phone 111 is provided with the indicator main part 121 which equipped with the indicator 119 the operating section body 115 provided with the final controlling element 113 which has arranged the auxiliary key 112 according to the hinge mechanism 117.

[0034]The key pad containing mechanism 123 which enables receipts and payments of a keypad, and the keypad 125 stored by said key pad containing mechanism 123 are formed in the back side of said operating section body 115. And the key pad containing mechanism 127 which enables receipts and payments of a keypad, and the keypad 129 stored by said key pad containing mechanism 127 are formed in the side front of said operating section body 115. The main key 131 is arranged at the keypad 129. The auxiliary keys 133 (for example, alphanumeric character key etc.) are arranged at the keypad 125. Said keypad 125,129 can be taken freely in and out of a longitudinal direction.

[0035]Drawing 6 shows the power supply insert part which inserts a power supply section.

[0036]The power supply insert part 145 is formed in the side bottom 143 of the operating section body 141, and a cell is built in this power supply insert part 145.

[0037]Drawing 7 and drawing 8 show the details of the key pad containing mechanism by slide.

[0038]A sliding mechanism has a guide part of a slot type and a rail type, for example.

[0039]Drawing 7 is referred to. The side view shown in drawing 7 is a thing when the cellular phone 1 shown in drawing 3 is seen from arrow AR1 direction.

[0040]The guide part 151 of the slot type is extended by the arrow AR 2-way

(drawing 3) along with \*\*\*\* of the right and left of the keypad 69, and the slot 153 is extended by this guide part 151 at the arrow AR 2-way (drawing 3). The projected part 155 which fits into said slot 153 is extended by the arrow AR 2-way (drawing 3) along the side of the right and left of the operating section body 55. Therefore, the keypad 69 can be freely slid to an arrow AR 2-way (drawing 3) along said slot 153, and it is constituted so that operation of a slide may be restricted by the stopper part which is not illustrated. When said keypad 69 stored is thoroughly pulled out from the operating section body 55, the power supply of a keypad is turned on, for example, a key input signal is transmitted to CPU of a main part by the serial interface. The power supply ON is performed by equipping the stopper part with the dog switch (not shown), for example.

[0041]Drawing 8 shows the rail-type sliding mechanism. This side view looks at the cellular phone 1 shown in drawing 1 from arrow AR3 direction.

[0042]The rail section 159 extended in the AR4 (drawing 1) direction at the right and left of \*\*\*\*\* of the keypad 19 is formed in the guide part 157 of the rail type. The slot 161 which fits into said rail section 159 is extended in the arrow AR4 (drawing 1) direction at the rear-face side of the main part 3. Therefore, the keypad 19 can be freely slid in the arrow AR4 (drawing 1) direction to the main part 3 along with said rail section 157, and it is constituted so that the range of the moving operation of arrow AR4 (drawing 1) direction may be restricted by the stopper part which is not illustrated. The stopper part is equipped with the dog switch (not shown) so that the power supply of the keypad 19 may be inputted, when said keypad 19 is thoroughly pulled out from a housed state.

[0043]Drawing 9 and drawing 10 show the details of the key pad containing mechanism of two step types.

[0044]Drawing 9 is referred to. This side view equips the keypad 69 with the keypad 901 (not shown in drawing 3) further, when the cellular phone 51 shown in drawing 3 is seen from arrow AR3 direction.

[0045]The guide part 151 of the slot type is extended by the arrow AR 2-way (drawing 3) along with \*\*\*\* of the right and left of the keypad 69, and the slot 153 is extended by this guide part 151 at the arrow AR 2-way (drawing 3). The

projected part 155 which fits into said slot 153 is extended by the arrow AR 2-way (drawing 3) along the side of the right and left of the operating section body 55. Therefore, the keypad 69 can be freely slid to an arrow AR 2-way (drawing 3) along said slot 153, and it is constituted so that operation of a slide may be restricted by the stopper part which is not illustrated.

[0046]The rail section 173 with which the guide part 171 of the rail type was extended in the AR2 (drawing 3) direction at the right and left of \*\*\*\*\* of the keypad 901 is formed in order to be stored by said keypad 69. The slot 175 which fits into said rail section 173 is extended in the arrow AR2 (drawing 3) direction at the rear-face side of the keypad 69. Therefore, the keypad 901 can be freely slid in the arrow AR2 (drawing 3) direction to the keypad 69 along with said rail section 173, and it is constituted so that the range of the moving operation of arrow AR2 (drawing 3) direction may be restricted by the stopper part which is not illustrated. Each stopper part is equipped with the dog switch (not shown) so that the power supply of the keypad 69,901 may be inputted, when said keypad 69 and the keypad 901 are thoroughly pulled out from a housed state.

[0047]Drawing 10 shows two steps of rail type sliding mechanisms. This side view looks at the cellular phone 21 of drawing 2 from arrow AR5 direction.

[0048]The rail section 183 extended in the AR6 (drawing 2) direction at the right and left of \*\*\*\*\* of the keypad 37 is formed in the guide part 181 of the rail type. The slot 185 which fits into said rail section 183 is extended in the arrow AR6 (drawing 2) direction at the rear-face side of the main part 23. Therefore, the keypad 37 can be freely slid in the arrow AR6 (drawing 2) direction to the main part 23 along with said rail section 183, and it is constituted so that the range of the moving operation of arrow AR6 (drawing 2) direction may be restricted by the stopper part which is not illustrated.

[0049]The rail section 189 extended in the AR6 (drawing 2) direction at the right and left of \*\*\*\*\* of the keypad 41 is formed in the guide part 187 of the rail type so that the keypad 41 may be stored to the keypad 37. The slot 191 which fits into said rail section 189 is extended in the arrow AR6 (drawing 2) direction at

the rear-face side of the keypad 37. Therefore, the keypad 41 can be freely slid in the arrow AR6 (drawing 2) direction to the keypad 37 along with said rail section 187, and it is constituted so that the range of the moving operation of arrow AR6 (drawing 2) direction may be restricted by the stopper part which is not illustrated. Each stopper part is equipped with the dog switch (not shown) so that the power supply of the keypads 37 and 41 may be inputted, when said keypad 37 and the keypad 41 are thoroughly pulled out from a housed state. [0050]Drawing 11 shows the hinge mechanism. Namely, the keypad 203 can store now according to the hinge mechanism 205 on the main part 201, enabling free rotation in arrow AR7 direction.

[0051]Drawing 12 shows the rolling mechanism. Namely, the main part 211 is equipped with the keypad 213 by the shaft part 215 in the surroundings of said shaft part 215, enabling free rotation in arrow AR8 direction.

[0052]This invention can be carried out in other modes by making a proper change, without being limited to the embodiment mentioned above. It is possible with a natural thing to make the function explained to what was explained by drawing 1 - drawing 5 by drawing 12 from drawing 6 into the cellular phone added suitably.

[0053]

[Effect of the Invention]Restriction of the number of keys can be raised substantially, holding portability, such as a size of a cellular phone, by arranging many auxiliary keys on the keypad which can be stored so that I may be understood from explanation of the embodiment of the invention like the above. Thereby, it is effective in the ability to aim at improvement in the function of a cellular phone easily. It is effective in the operativity of a cellular phone becoming high.

[0054]It is effective in the ability to give the function as a portable personal computer to a cellular phone.

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**DESCRIPTION OF DRAWINGS**

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[Brief Description of the Drawings]

[Drawing 1] It is a perspective view of the integral-type cellular phone provided with one keypad.

[Drawing 2] It is a perspective view of the integral-type cellular phone provided with two keypads.

[Drawing 3] It is a perspective view of the foldaway cellular phone provided with two keypads.

[Drawing 4] It is a perspective view of the foldaway cellular phone provided with two keypads.

[Drawing 5] It is a perspective view of the foldaway cellular phone provided with two keypads.

[Drawing 6] It is a perspective view of a power supply insert part.

[Drawing 7] It is an explanatory view explaining a sliding mechanism.

[Drawing 8] It is an explanatory view explaining a sliding mechanism.

[Drawing 9] It is an explanatory view explaining 2 step-type sliding mechanism.

[Drawing 10] It is an explanatory view explaining 2 step-type sliding mechanism.

[Drawing 11] It is an explanatory view explaining a hinge mechanism.

[Drawing 12] It is an explanatory view explaining a rolling mechanism.

[Description of Notations]

- 1 Integral-type cellular phone
- 3 Main part
- 5 Indicator
- 7 Main key
- 9 Final controlling element
- 11 Microphone part
- 13 Loudspeaker part
- 15 Key pad containing mechanism
- 17 Auxiliary key
- 19 Keypad

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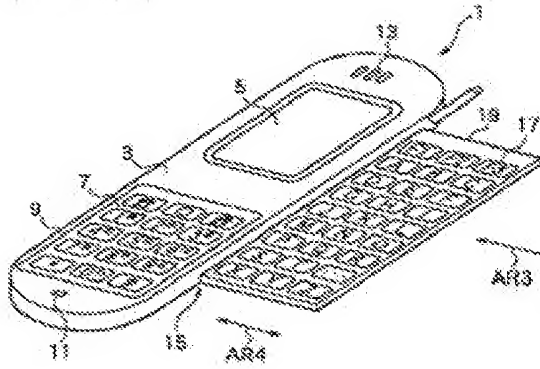
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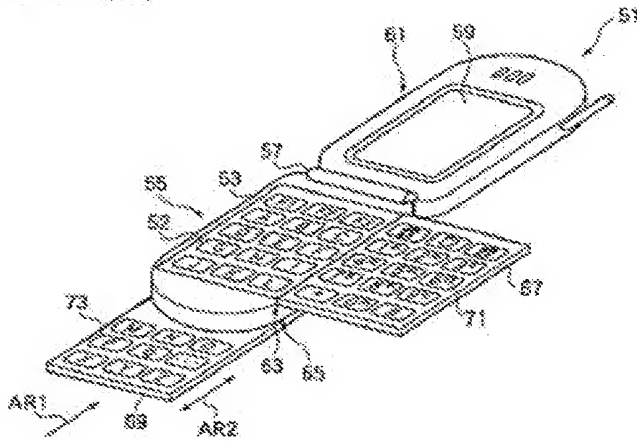
**DRAWINGS**

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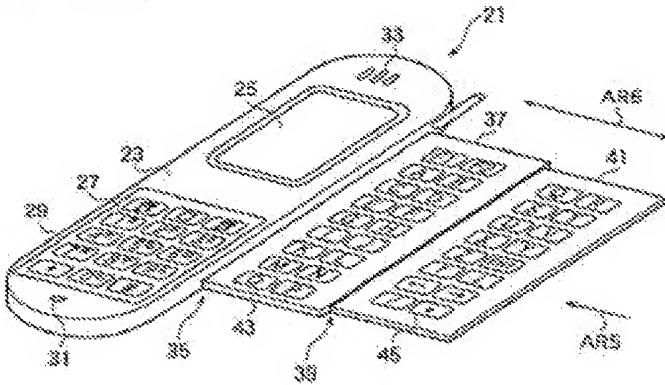
[Drawing 1]



[Drawing 3]

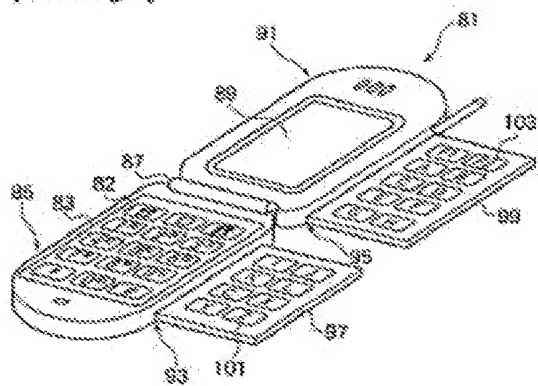


[Drawing 2]

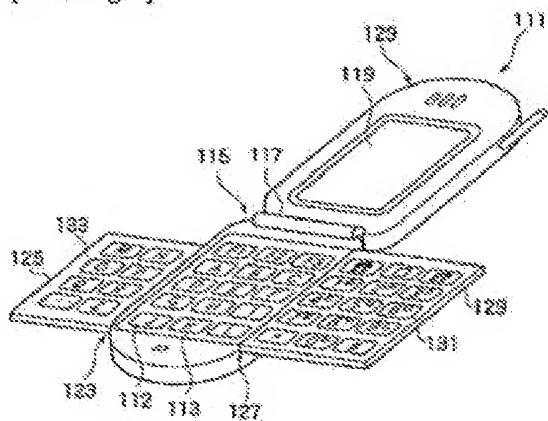




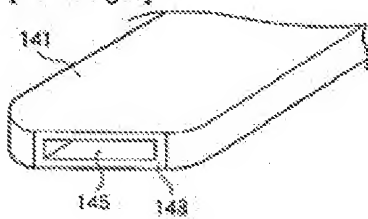
[Drawing 4]



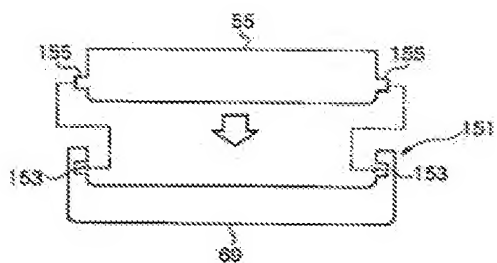
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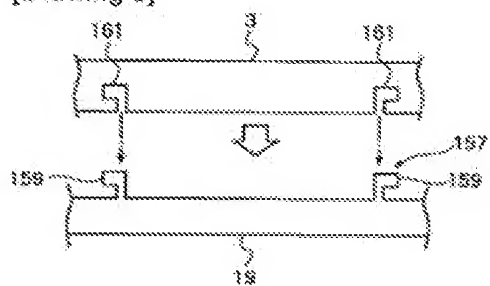
[Drawing 6]



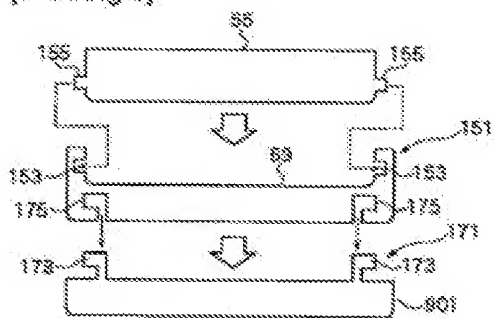
[Drawing 7]



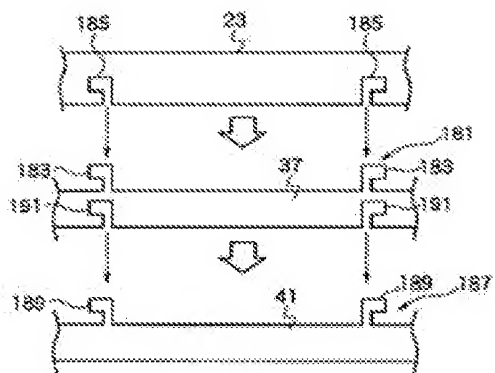
[Drawing 8]



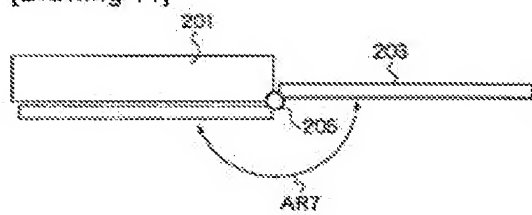
[Drawing 9]



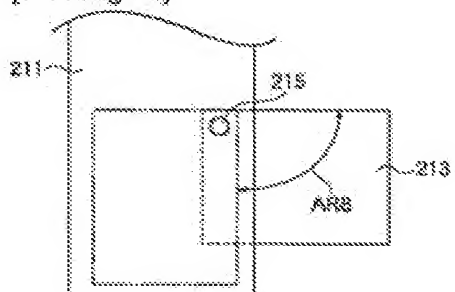
[Drawing 10]



[Drawing 11]



[Drawing 12]



[Translation done.]